

Curriculum Vitae

Name: Daniel Arden Alexander, Ph.D. 

Date of preparation: October 10, 2025

I. EDUCATION

Dates	Year Awarded	Institution	Degree
08/14 – 12/17	2017	Rensselaer Polytechnic Institute, Troy NY	B.S. in Physics, <i>magna cum laude</i>
01/17 – 05/18	2018	Rensselaer Polytechnic Institute, Troy NY	M.S. in Physics
06/18 – 03/22	2022	Thayer School of Engineering, Dartmouth College, Hanover NH	Ph.D. in Engineering Science, conc. In Medical Physics

II. POSTDOCTORAL/RESIDENCY TRAINING

Dates	Institution	Title	Specialty
05/22 – 06/23	Department of Radiation Oncology, University of Pennsylvania, Philadelphia PA	Postdoctoral Fellow	Artificial Intelligence in Radiation Therapy, Cherenkov Imaging
07/23 – 06/25	Department of Radiation Oncology, University of Pennsylvania, Philadelphia PA	Resident	Therapeutic Medical Physics
07/24 – 06/25	Department of Radiation Oncology, University of Pennsylvania, Philadelphia PA	Chief Resident	Therapeutic Medical Physics

III. ACADEMIC APPOINTMENTS

A. Current Primary Appointments

Dates	Institution	Title
06/25 – present	Department of Radiation Oncology and Applied Sciences, Geisel School of Medicine, Dartmouth College, Hanover NH	Assistant Professor

B. Other Appointments

Not applicable

C. Past Appointments

Dates	Institution	Title
11/14 – 05/18	Brown Research Group , Department of Physics and Astronomy, Rensselaer Polytechnic Institute, Troy NY	Research Assistant
06/18 – 11/21	Optics in Medicine Lab , Thayer School of Engineering, Dartmouth College, Hanover NH	Graduate Research Assistant
05/22 – 06/23	Zhu Lab , Department of Radiation Oncology, University of Pennsylvania, Philadelphia PA	Research Fellow

IV. INSTITUTIONAL LEADERSHIP ROLES

Dates	Institution	Program	Title
10/25 – present	Department of Radiation Oncology and Applied Sciences, Dartmouth	Therapeutic Medical Physics Residency	Associate Program Director

V. LICENSURE AND CERTIFICATION

Dates	Licensure/Certification
08/12 – present	State of New Hampshire Provider of Radiation Machine-Related Services (Qualified Medical Physicist)
09/12 – present	State of New Hampshire, Medical Physicist on Radioactive Materials License #130R, Mary Hitchcock Memorial Hospital (Authorized Medical Physicist)

VI. HOSPITAL OF HEALTH SYSTEM APPOINTMENTS

Dates	Institution	Title
06/25 – present	Department of Radiation Oncology and Applied Sciences, Dartmouth Cancer Center, Dartmouth-Hitchcock Medical Center, Lebanon NH	Medical Physicist

VII. OTHER PROFESSIONAL POSITIONS

Dates	Institution	Title
06/15 – 08/15	Rhode Island Nuclear Science Center, Narragansett RI	Summer Intern
06/16 – 08/16	Brown Research Group , Department of Physics and Astronomy, Rensselaer Polytechnic Institute, Troy NY	Summer Research Intern
06/17 – 09/17	Nova Photonics Lab, Princeton Plasma Physics Lab, Princeton NJ (Science Undergraduate Laboratory Internship program, US Dept. of Energy)	Summer Research Intern
07/20 – 04/22	DoseOptics LLC, Lebanon NH	Research Scientist

VIII. PROFESSIONAL DEVELOPMENT ACTIVITIES

Dates	Organization/Insitution	Program
07/19	American Association of Physicists in Medicine	Therapy Physics Review Course, American Association of Physicists in Medicine Annual Meeting, San Antonio TX, July 15, 2019
05/25	Department of Radiation Medicine, University of California San Diego	Patient Engagement for Medical Physicists Workshop, San Diego CA (Remote), May 8 – 9, 2025
06/25	Vision RT/SGRT Community	Surface-Guided Radiation Therapy Community Meeting, Denver CO, June 5-6 2025

IX. TEACHING ACTIVITIES**A. Undergraduate**

Dates	Organization/Institution	Activity
08/15 – 12/15	Department of Physics and Astronomy, Rensselaer Polytechnic Institute, Troy NY	Teaching Assistant, PHYS-1100: Physics I (5 hr/wk)
08/17 – 12/17	Department of Physics and Astronomy, Rensselaer Polytechnic Institute, Troy NY	Teaching Assistant, PHYS-2350: Experimental Physics (5 hr/wk)

B. Undergraduate Medical Education (Classroom)

Not applicable

C. Undergraduate Medical Education (Clerkship/Clinical)

Not applicable

D. Graduate Medical Education (GME)

Dates	Organization/Institution	Activity	Audience/ Resident Name
06/25 – present	Dartmouth Health/Geisel School of Medicine, Lebanon NH	Training in radiation therapy physics (4 residents/yr, 20 hr/yr)	Radiation Oncology Residents
09/25 – present	Dartmouth Health/Geisel School of Medicine, Lebanon NH	Precepting In Clinic (2 residents/yr, 100 hr/yr)	Medical Physics Residents
09/25 – 12/25	Dartmouth Health/Geisel School of Medicine, Lebanon NH	Primary Mentor, Basic Treatment Planning Rotation (24 hr/yr)	Shiva Bhandari, PhD

E. Other Clinical Education Programs

Not applicable

F. Graduate (Masters/PhD)

Dates	Organization/Institution	Activity
09/20 – 11/20	Thayer School of Engineering, Dartmouth College, Hanover NH	Teaching Assistant, ENGS-167: Medical Imaging (5 hr/wk)
09/21 – 11/21	Thayer School of Engineering, Dartmouth College, Hanover NH	Teaching Assistant, ENGG-168: Biomedical Radiation Transport (5 hr/wk)
2025 – present	Thayer School of Engineering, Dartmouth College, Hanover NH	ENGG-168: Biomedical Radiation Transport, 2-3 guest lectures on Radiation Physics (4 hr/yr)

X. PRIMARY RESEARCH ADVISING**A. Undergraduate Students**

Dates	Organization/Institution	Name	Program	Mentorship Role
06/20 – 08/20	Thayer School of Engineering, Dartmouth College, Hanover NH	Aris Rassias	Visiting Summer Student, Union College	Primary advisor (PhD Student)
06/21 – 08/21	Thayer School of Engineering, Dartmouth College, Hanover NH	Aislinn Mitcham	Summer Student, Dartmouth College,	Primary advisor (PhD Student)
06/25 – 08/25	Dartmouth Health/Geisel School of Medicine at Dartmouth, Lebanon NH	Mia Straussman	Summer Student, U. Rochester	Faculty Advisor

B. Graduate Students

Dates	Organization/Institution	Name	Degree	Mentorship Role
07/22 – 06/23	Department of Radiation Oncology, University of Pennsylvania, Philadelphia PA	Olivia Certa	MS in Medical Physics	Research supervisor (Postdoc)
06/25 – 08/25	Dartmouth Health/Geisel School of Medicine at Dartmouth, Grand Valley State University	Ashleigh Sammataro	MS in Medical Dosimetry	Primary research advisor

C. Medical Students

Not applicable

D. Residents/Fellows

Dates	Organization/Institution	Name	Mentorship Role
06/25 – 08/25	Dartmouth Health/Geisel School of Medicine at Dartmouth, Lebanon NH	Shane McCarthy, PhD	Co-advisor (50%) for medical physics resident research year

XI. ADVISING/MENTORING (OTHER)**A. Undergraduate Students**

Not applicable

B. Graduate Students

Dates	Organization/Institution	Mentee	Degree	Mentorship Role
05/22 – 06/23	Department of Radiation Oncology, University of Pennsylvania, Philadelphia PA	Yifeng Zhu	PhD	Research mentor (postdoc)
07/25 – present	Thayer School of Engineering, Dartmouth College, Hanover NH	Natasha Mulenga	PhD	Research mentor (non-primary)
07/25 – present	Department of Medical Physics, University of Wisconsin-Madison	Jeremy Hallett	PhD	External research mentor
07/25 – present	Department of Medical Physics, University of Wisconsin-Madison	Aubrey Parks	PhD	External research mentor
07/25 – present	Departments of Computer Science and Radiation Oncology, University of Missouri	Dinglun He	PhD	External research mentor

C. Medical

Not applicable

D. Residents/Fellows

Dates	Organization/Institution	Mentee	Program
07/25 – present	Dartmouth Health/Geisel School of Medicine at Dartmouth, Lebanon NH	Allison Matous, MD	Radiation Oncology
07/25 – present	Dartmouth Health/Geisel School of Medicine at Dartmouth, Lebanon NH	Abigail Lauder, MD	Radiation Oncology
07/25 – present	Dartmouth Health/Geisel School of Medicine at Dartmouth, Lebanon NH	Shiva Bhandari, PhD	Medical Physics
07/25 – present	Dartmouth Health/Geisel School of Medicine at Dartmouth, Lebanon NH	Jilcha Feyisa, MD	Radiation Oncology
07/25 – present	Dartmouth Health/Geisel School of Medicine at Dartmouth, Lebanon NH	Shane McCarthy, PhD	Medical Physics
07/25 – present	Dartmouth Health/Geisel School of Medicine at Dartmouth, Lebanon NH	Anna Caldwell, MD	Radiation Oncology

XII. ENGAGEMENT, ADVOCACY, COMMUNITY SERVICE, COMMUNITY EDUCATION

Dates	Organization/Institution	Details
Fall 2021	Adopt-a-physicist / Sigma Pi Sigma Physics Honor Society	Led a series of forum discussions with high school physics classrooms accords the USA on topics of careers in physics. Organized by Sigma Pi Sigma and the American Association of Physics Teachers.
2021 – 2022	Dartmouth College / Dartmouth Association of Medical Physics Students	Founded and served as president of a organization for medical physics students to promote outreach and professional development
Summer 2023	American Association of Physicists in Medicine / Society of Physics Students	Organizer and Judge for an outreach program and poster competition for undergraduates at the AAPM Annual Meeting, designed to encourage medical physics as a career.

Fall 2023	Adopt-a-physicist / Sigma Pi Sigma Physics Honor Society	Led a series of forum discussions with high school physics classrooms across the USA on topics of careers in physics. Organized by Sigma Pi Sigma and the American Association of Physics Teachers.
2023 – 2025	Department of Radiation Oncology, University of Pennsylvania	Served on the Penn Rad Onc DEI and Outreach Subcommittees, working on programs for local middle/high school students in underserved urban communities to get exposed to careers in radiation medicine

XIII. RESEARCH ACTIVITIES

A. Sponsored Activity (grants and contracts)

1. Awarded grants or contracts on which you had a role as key personnel or had a significant role in the crafting/writing of the proposal when submitted

Not Applicable.

2. Awarded grants or contracts on which you have received substantive support but were not involved in crafting/writing the proposal prior to submission and review

- 2020-2021
A Non-Contact Optical Patient and Beam Dosimetry System for Continuous in vivo Radiotherapy Verification
Consultant/Graduate Student (PI: Ware/DoseOptics LLC)
NIH/NCI R44CA232879
- 2018 – 2020
Optical Cherenkov calibration for human radiation therapy
Graduate Student (PI: Pogue)
NIH/NIBIB R01EB023909

B. Pending Submissions

Not applicable.

C. Clinical Faculty: Activities for which you have been provided protected time (but not funding)

Not applicable.

XIV. PROGRAM DEVELOPMENT

- Dartmouth College Medical Physics Education Program. CAMPEP-accredited PhD/certificate program in medical physics. Faculty Member. Participate in ongoing program development (2025 – present). Program assessed by residency match rate and graduate success.
- Dartmouth Health Medical Physics Residency Program. CAMPEP-accredited residency program in therapeutic medical physics. Associate Program Director. Development of clinical training curriculum, program policies, and accreditation (2025 – present). Program assessed by job placement rate and graduate success.

XV. ENTREPRENEURIAL ACTIVITIES

A. Patents

1. Granted Patents

Date Granted	Patent Number	Details
2025-09-30	US 12,427,342	Cherenkov imaging-based solution for MR-Linac quality assurance

2. Patent Applications

Date Filed	Patent Number	Details
2022-03-07	US 2024/0066324 A1, WO 2022/187743 A1	Cherenkov imaging-based solution for MR-Linac quality assurance

XVI. MAJOR COMMITTEE ASSIGNMENTS, INCLUSIVE OF PROFESSIONAL SOCIETIES

A. National/International

Dates	Committee	Role	Organization/Institution
03/23 – 12/23	Annual Meeting Analysis and Evaluation Working Group	Guest	American Association of Physicists in Medicine (AAPM)
01/23 – 12/23	Global Research and Scientific Innovation Committee	Guest	American Association of Physicists in Medicine (AAPM)
01/23 – 12/23	Research Committee	Member (ex-officio)	American Association of Physicists in Medicine (AAPM)
01/23 – 12/23	Working Group on Student and Trainee Research	Chair	American Association of Physicists in Medicine (AAPM)
03/23 – 12/23	Expanding Horizons Review Board	Chair	American Association of Physicists in Medicine (AAPM)
01/24 – 12/24	Research Committee	Guest	American Association of Physicists in Medicine (AAPM)
03/24 – 12/24	Global Early Career Research Subcommittee	Member	American Association of Physicists in Medicine (AAPM)
06/24 – 12/25	Science Council Associates Mentorship Program	Associate	American Association of Physicists in Medicine (AAPM)
09/24 – present	Machine Intelligence Subcommittee	Guest	American Association of Physicists in Medicine (AAPM)
03/24 – present	Expanding Horizons Review Board	Member	American Association of Physicists in Medicine (AAPM)
04/22 – present	Working Group on Student and Trainee Research	Member	American Association of Physicists in Medicine (AAPM)

B. Regional

Not applicable.

C. Institutional

Dates	Committee	Role	Organization/Institution
2023 – 2025	DEI and Outreach Subcommittee	Member	Department of Radiation Oncology, University of Pennsylvania
2024 – 2025	Medical Physics Residency Steering Committee	Member (ex officio)	Department of Radiation Oncology, University of Pennsylvania
07/25 – present	Incident Review and Response Committee	Member	Department of Radiation Oncology and Applied Sciences, Dartmouth Health
07/25 – present	Workflow Standardization Committee	Member	Department of Radiation Oncology and Applied Sciences, Dartmouth Health
01/23 – 12/23	Research Committee	Member (ex-officio)	Department of Radiation Oncology and Applied Sciences, Dartmouth Health

XVII. INSTITUTIONAL CENTER OR PROGRAM AFFILIATIONS

Not Applicable.

XVIII. EDITORIAL BOARDS

Not Applicable.

XIX. JOURNAL REFEREE ACTIVITY

Dates	Journal
2019 – 2021	PLOS One
2020 – 2021	Journal of Physics Communications
2020 – present	Physics in Medicine and Biology
2020 – present	Journal of Applied Clinical Medical Physics
2020 – present	Medical Physics
2023 – present	Radiation Measurements
2025 – present	Practical Radiation Oncology

Book Reviews

Dates	Journal
2023	The Physics of X-Rays and Electrons, 3rd Ed, MedInfoNow (Doody).
2024	Workflow Optimization in Radiation Oncology: From Theory to Clinical Implementation, AAPM Monograph No. 41

XX. AWARDS AND HONORS

Date	Award/Honor	Organization/Institution
2014 – 2018	Dean's Honor List	Rensselaer Polytechnic Institute
2014	Rensselaer Medal Scholarship	Rensselaer Polytechnic Institute
2015	Archimedean 4.0 Award	Rensselaer Polytechnic Institute
2016	Sigma Pi Sigma National Physics Honor Society	Rensselaer Polytechnic Institute
2016	Founders Award of Excellence	Rensselaer Polytechnic Institute
2019	1st Place Peter Neurath Young Investigator Symposium	AAPM New England Chapter
2019 – 2020	Alma Hass Milham Fellowship in Biomedical Engineering	Thayer School of Engineering
2020	Members in Training Research Award - Top 3 in Physics	Radiosurgery Society
2020	Junior Investigator Award	Council on Ionizing Radiation Measurements and Standards
2021	1 st Place Research in Progress Symposium	Thayer School of Engineering
2021	Best in Physics – Therapy (Annual Meeting)	American Association of Physicists in Medicine (AAPM)
2021	2 nd Place in Early Career Investigator Symposium, Spring Clinical Meeting	American Association of Physicists in Medicine (AAPM)
2021	Annual Meeting Abstract Award	American Society for Radiation Oncology (ASTRO)
2024	Science Council Associates Mentorship Program Awardee	American Association of Physicists in Medicine (AAPM)

XXI. INVITED/CONTRIBUTED PRESENTATIONS

(*) = Talk by personalized invitation

(#) = presentation without personalized invitation

(^) = CME eligible activity

A. Invited Talks

1. International

Not applicable.

2. National

1. (*) "Cherenkov Imaging - Clinical Experience with DoseRT." VisionRT Event, AAPM Annual Meeting. Washington DC, July 26, 2025.

3. Regional

1. (^) "An Update on Pathways into Medical Physics – Today's Training and Board Certification Landscape." AAPM New England Chapter Meeting. Worcester MA, October 24, 2025.

B. Contributed Presentations

1. International

Not applicable

2. National

1. "Radioluminescence imaging of dose surrogates for head and neck radiotherapy." Young Investigator Symposium. AAPM Spring Clinical Meeting, Kissimmee FL, March 2019.
2. "Cherenkov emission and scintillation imaging for surface dosimetry and interfraction anatomy tracking in head and neck radiotherapy." AAPM Annual Meeting, San Antonio TX, July 2019.
3. "Cherenkov imaging for adaptive replanning guidance in head and neck radiotherapy". Radiosurgery Society Scientific Meeting, Virtual, June 2020.
4. "Efficient Acquisition of MR-Linac Commissioning Data Using Cherenkov Projection Imaging." Joint AAPM|COMP Annual Meeting, Virtual, July 2020.
5. "Scintillation Imaging for 2D Beam Characterization and Output Measurement for MR-Linac Quality Assurance." Joint AAPM|COMP Annual Meeting, Virtual, July 2020.
6. "Efficient method for daily quality assurance of an MR-Linac using time-gated scintillation imaging." Junior Investigator Symposium. Council on Ionizing Radiation Measurements and Standards Annual Meeting, Virtual, April 2021.
7. "MR-Linac Isocenter Coincidence Verification Using Cherenkov Imaging." Early Career Investigator Symposium. AAPM Spring Clinical Meeting, Virtual, April 2021.
8. "Always-On Cherenkov Imaging for Incident Learning in Radiation Therapy." AAPM Annual Meeting, Virtual, July 2021.
9. "3D Isocenter Coincidence Measurement for MR- Linacs with Cherenkov Imaging." AAPM Annual Meeting, Virtual, July 2021.
10. "Imaging Radiotherapy-Induced Cherenkov Emission in Color." Annual Meeting Abstract Award. ASTRO Annual Meeting, Chicago IL, October 2021.
11. "Clinic-Wide Cherenkov Imaging Identifies New Areas of Quality Improvement in Radiation Therapy." Early Career Investigator Symposium. AAPM Spring Clinical Meeting, New Orleans FL, March 2022.
12. "Streamlined MR-Linac Daily QA Using Cherenkov Imaging: Longitudinal Performance Assessment After 16 Months of Clinical Use." AAPM Annual Meeting, Washington DC, July 2022.
13. "Comparison of surface dose during whole breast radiation therapy on Halcyon and TrueBeam using Cherenkov imaging." SPIE Photonics West, San Francisco CA, January 2023.
14. "Estimating Superficial Dose for Breast Radiotherapy on Halcyon By Combining Cherenkov Imaging and 3D Texture Scanning." AAPM Annual Meeting, Houston TX, July 2023.
15. "Safeguarding Clinical AI-Based Auto-Segmentation: Open-Source Models as Quality Assurance Against Catastrophic Failures". ICCR, Lyon France, 2024.
16. "Enhancing Safety in Clinical AI Auto-Segmentation: Utilizing an Open-Source Model for Quality Assurance and Error Reduction." AAPM Annual Meeting, Los Angeles CA, July 2024.
17. "Evaluation of a Commercial Autosegmentation System for HN Oars: A Large US Institutional Experience." AAPM Annual Meeting, Los Angeles CA, July 2024.

18. "Assessing the Impact of Intrafraction Shifts on Critical OAR Doses in a Standardized Spine SBRT Program." AAPM Annual Meeting, Washington DC, July 2025.

3. Regional

1. "Assessment of Imaging Cherenkov and scintillation signals in head and neck radiotherapy." Young Investigator Symposium. AAPM New England Chapter Winter Meeting, Boston MA, March 2019.
2. "Clinic-Wide Cherenkov Imaging Identifies New Areas of Quality Improvement in Radiation Therapy". Geisel School of Medicine Biomedical Research Day, Lebanon NH, 2021.
3. "MR-Linac Machine QA Efficiencies Using Cherenkov Imaging". NCCC Radiation Oncology Research Retreat, Lebanon NH November 2021.

XXII. BIBLIOGRAPHY

A. Peer-Reviewed Publications

1. Most significant publications (3-5)

1. Il Tendler, A Hartford, M Jermyn, E LaRochelle, X Cao, V Borza, **D Alexander**, P Bruza, J Hoopes, K Moodie, BP Marr, BB Williams, BW Pogue, DJ Gladstone, LA Jarvis. "Experimentally Observed Cherenkov light generation in the eye during radiotherapy." Int J Radiat Oncol Biol Phys. 2019; 106(2): 422-429. doi: 10.1016/j.ijrobp.2019.10.031.
2. LA Jarvis, RA Hachadorian, M Jermyn, P Bruza, **DA Alexander**, Il Tendler, BB Williams, DJ Gladstone, PE Schaner, BI Zaki, BW Pogue. "Initial Clinical Experience of Cherenkov Imaging in EBRT Identifies Opportunities to Improve Treatment Delivery." Int J Radiat Oncol Biol Phys. 2020; 109(5): 1627-1637. doi: 10.1016/j.ijrobp.2020.11.013.
3. **DA Alexander**, A Nomezine, LA Jarvis, DJ Gladstone, BW Pogue, P Bruza. "Color Cherenkov Imaging of Clinical Radiation Therapy." Light Sci Appl. 2021; 10(1): 226. doi: 10.1038/s41377-021-00660-0.
4. **DA Alexander**, SM Decker, M Jermyn, P Bruza, R Zhang, E Chen, TL McGlynn, RA Rosselot, J Lee, ML Rose, BB Williams, BW Pogue, DJ Gladstone, LA Jarvis. "One Year of Clinic Wide Cherenkov Imaging for Discovery of Quality Improvement Opportunities in Radiation Therapy." Pract Radiat Oncol, 2022. doi: 10.1016/j.prro.2022.06.009.

2. All other publications

1. **DA Alexander**, Il Tendler, P Bruza, X Cao, PE Schaner, BS Marshall, LA Jarvis, DJ Gladstone, and BW Pogue. "Assessment of imaging Cherenkov and scintillation signals in head and neck radiotherapy." Phys Med Biol. 2019; 64(14): 145021. doi: 10.1088/1361-6560/ab25a3.
2. **DA Alexander**, R Zhang, P Bruza, BW Pogue, DJ Gladstone. "Scintillation imaging as a high-resolution, remote, versatile 2D detection system for MR-linac quality assurance." Med Phys. 2020; 47(9): 3861-3869. doi: 10.1002/mp.14353.
3. **DA Alexander**, P Bruza, JCM Farwell, V Krishnaswamy, R Zhang, DJ Gladstone, BW Pogue. "Detective quantum efficiency of intensified CMOS cameras for Cherenkov imaging in radiotherapy." Phys Med Biol. 2020; 65(22): 225013. doi: 10.1088/1361-6560/abb0c5.
4. **DA Alexander**, P Bruza, AG Rassias, JM Andreozzi, BW Pogue, R Zhang, DJ Gladstone. "Visual Isocenter Position Enhanced Review (VIPER): A Cherenkov Imaging-Based Solution for MR-Linac Daily QA." Med Phys. 2021; 48(6): 2750-2759. doi: 10.1002/mp.14892.
5. JM Andreozzi, P Bruza, J Cammin, **DA Alexander**, BW Pogue, O Green, DJ Gladstone. "Optical emission-based phantom to verify coincidence of radiotherapy and imaging isocenters on an MR-linac." J Appl Clin Med Phys. 2021; 22(9): 252- 261. doi: 10.1002/acm2.13377.
6. SM Decker, **DA Alexander**, RL Hachadorian, R Zhang, DJ Gladstone, P Bruza, BW Pogue. "Estimation of Diffuse Cherenkov Optical Emission from External Beam Radiation Build-Up in Tissue." J Biomed Opt. 2021; 26(9): 098003. doi: 10.1117/1.JBO.26.9.098003.
7. M Rahman, P Bruza, RL Hachadorian, **DA Alexander**, X Cao, R Zhang, DJ Gladstone, BW Pogue. "Optimization of In Vivo Cherenkov Imaging Dosimetry via Spectral Choices for Ambient Background Lights and Filtering." J Biomed Opt. 2021; 26(10): 106003. doi: 10.1117/1.JBO.26.10.106003.

8. MR Ashraf, C Farwell, **DA Alexander**, R Zhang, DJ Gladstone, BW Pogue, P Bruza. "3D Dose Delivery QA using Couch and Gantry Mounted Cameras." J Phys Conf Ser. 2022; 2167(1): 012027. doi: 10.1088/1742-6596/2167/1/012027.
9. SM Decker, **DA Alexander**, P Bruza, R Zhang, E Chen, LA Jarvis, DJ Gladstone and BW Pogue. "Performance comparison of quantitative metrics for analysis of in vivo cherenkov imaging incident detection during radiotherapy." Br J Radiol. 2022; 95(1137): 20211346. doi: 10.1259/bjr.20211346.
10. E Chen, BW Pogue, P Bruza, **DA Alexander**, NL Andino, SM Decker, DM Gaudet, DJ Gladstone, MJ Lake, SR Levene, JL Michelson, HL Robinson, DN Stallings, JE Starkey, LA Jarvis. "Clinical implementation of the first Cherenkov imaging system in a community- based hospital." Tech Innov Patient Support Radiat Oncol. 2022; 24: 1-5. doi: 10.1016/j.tipsro.2022.08.011.
11. B Hunt, GS Gill, **DA Alexander**, SS Streeter, DJ Gladstone, GA Russo, BI Zaki, BW Pogue, R Zhang. "Fast deformable image registration for real-time target tracking during radiotherapy using cine MRI and deep learning." Int J Radiat Oncol Biol Phys, 2023; 115(4): 983-993. doi: 10.1016/j.ijrobp.2022.09.086.
12. VA Wickramasinghe, SM Decker, SS Streeter, AM Sloop, AF Petusseau, **DA Alexander**, P Bruza, DJ Gladstone, R Zhang, BW Pogue. "Color-resolved Cherenkov imaging allows for differential signal detection in blood and melanin content." J Biomed Opt. 2023; 28(3): 036005. doi: 10.1117/1.JBO.28.3.036005.
13. **DA Alexander**, S Majji, M Jermyn, B Byrd, P Bruza, T Li, TC Zhu. "Characterization of Cherenkov imaging parameters and positional constraints on an O-ring linear accelerator." Phys Med Biol, 2023; 68(20), 20NT02. doi: 10.1088/1361-6560/acdf2.
14. R Zhang, S Decker, **D Alexander**, R Ashraf, M Rahman, R Hachadorian, G Gill, M Rose, B Hunt, P J Hoopes, L Jarvis, P Bruza, D Gladstone and B Pogue. "Contemporary Applications of Cherenkov Imaging in Radiation Therapy." J Phys Conf Series, 2023; Series (Vol. 2630, No. 1, p. 012011). doi: 10.1088/1742-6596/2630/1/012011.
15. X Liu, **D Alexander**, D Kayser, T Speck, RD Wiersma. "A novel SGRT system for real-time optical surface tracking or guidance." J Appl Clin Med Phys, 2025; 26(7), e70138. doi: 10.1002/acm2.70138
16. SM Decker, JM Andreozzi, D Hernandez, **DA Alexander**, V Wickramasinghe, R L Hachadorian, I M Oraiqat, E Chen, IR Washington, J Gui, R Zhang, LA Jarvis, P Bruza, DJ Gladstone and BW Pogue. "Improving Cherenkov-based radiotherapy dose estimates in diverse patient populations via skin luminance imaging". Phys Med Biol, 2025; 70(15), 155006. doi: 10.1088/1361-6560/aded68.

B. Other Scholarly Work in Print or Media

1. Published Proceedings

1. Y Zhu, **DA Alexander**, T Miao, A Maity, JP Plastaras, I Payday, M LaRiviere, BW Pogue, TC Zhu. "Evaluation of the cumulative Cherenkov converted dose on TSET patients with multiple Cherenkov cameras." Multimodal Biomed Imaging XVIII. 2023; 12359. doi: 10.1117/12.2651177.
2. **DA Alexander**, O Certa, A Haertter, T Li, N Taunk, TC Zhu. "Comparison of surface dose during whole breast radiation therapy on Halcyon and TrueBeam using Cherenkov imaging." Multimodal Biomed Imaging XVIII. 2023; 12371: 23-34. doi: 10.1117/12.2652588
3. Y Zhu, BK Byrd, **DA Alexander**, A Maity, JP Plastaras, M LaRiviere, BW Pogue, TC Zhu. "Validation of the Cherenkov converted dose using multiple Cherenkov images on TSET patients." Optical Methods for Tumor Treatment and Detection: Mechanisms and Techniques in Photodynamic Therapy XXXII; PC1282302 (2024).. doi: 10.1117/12.3003498.
4. BK Byrd, **DA Alexander**, M Gallardo, B Lu, D Sourvanos, T Li, N Taunk, G Freedman, T Zhu. "Improving Cherenkov-to-dose linearity in tissue for quantitative surface dosimetry during whole breast radiation therapy." Multimodal Biomedical Imaging XIX; 1283405 (2024). Doi: 10.1117/12.3000357.
5. R McBeth, **D Alexander**, S Philbrook, WR Green. "Co-Working with AI: Lessons Learned from Integrating AI into the Daily Clinical Workflow of a Large Academic Radiation Oncology Department." Society for Imaging Informatics in Medicine Annual Meeting, National Harbor MD, 2024. Proceedings Link: https://annualmeeting.siiim.org/wp-content/uploads/2024/04/4021_McBeth_Co-Working-with-AI.pdf

6. **D Alexander**, R McBeth. "Safeguarding Clinical AI-Based Auto-Segmentation: Open-Source Models as Quality Assurance Against Catastrophic Failures". ICCR, Lyon France, 2024. Proceedings Link: <https://hal.science/hal-04720234>.
7. B Lu, Y Zhu, B Byrd, **D Alexander**, JP Plastaras, T Li, L Chen, BW Pogue, TC Zhu. "Understanding the impact of patient-specific geometries on Cherenkov emission-to-dose relationship during external beam radiation therapy (EBRT)". SPIE Photonics West, San Francisco CA, January 2025. Doi: 10.1117/12.3048321
8. B Lu, Y Zhu, B Byrd, **D Alexander**, JP Plastaras, T Li, L Chen, BW Pogue, TC Zhu. "Real-time dosimetry using scintillator technology in external beam radiation therapy (EBRT)". Multimodal Biomedical Imaging XX; 1330909 (2025) Doi: 10.1117/12.3048325

C. Abstracts

1. **DA Alexander**, I Tendler, P Bruza, DJ Gladstone, P Schaner, LA Jarvis, BW Pogue. "Radioluminescence imaging of dose surrogates for head and neck radiotherapy." Young Investigator Symposium. AAPM Spring Clinical Meeting, Kissimmee FL, March 2019. J Appl Clin Med Phys. 2019; 20(5): 144–179. Oral. doi: 10.1002/acm2.12588.
2. B Marshall, **DA Alexander**, P Bruza, BW Pogue, DJ Gladstone, S Jobin, LA Jarvis. "Monitoring anatomy changes in head and neck radiotherapy using Cherenkov imaging." AAMD Annual Meeting, Anaheim CA, June 2019. Poster.
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